Notebook Series -- Pocket Notebooks
Notebook, PN-16-11-15.1

The dated entries in this pocket notebook cover the period October 1916-January 1917. The book was used by Edison to record ideas about business matters, experiments to be tried, and other tasks to be performed. Some of the items have been crossed out and marked "Ent." Included are experimental notes pertaining to chemicals, disc record composition, batteries, and the transmittal of photographs by telephone and acoustics. Also included are notes on military topics such as hydrogen detectors to locate submarines, trench warfare, gun position triangulation, night photography, and range finders, as well as other war-related matters such as German chemical production.

Among the business-related entries are estimates of projected sales of Diamond Disc and Amberola records and a notation regarding the possible resignation of Carl H. Wilson, vice president and general manager of Thomas A. Edison, Inc. The entries at the end of the book appear to be clean transcriptions of entries from PN-16-11-15.2. The last page contains a notation concerning Edison's agreement of July 22, 1915, with H. H. Meno Kammerhoff, supervisor of operations at his chemical plants in Silver Lake. Other Edison employees mentioned in the book are Charles T. Dally, William W. Dinwiddie, Archiebald D. Hoffman, and Sherwood T. (Sam) Moore, principal assistants in the development of disc records. The pages are unnumbered. Approximately 150 pages have been used.

Alcohol and Ammonia Sulphide.

No

HCl + Tin — Resinous Tin by Sulphuretted Hydrogen Amido —

On heating Nitrosophenol suspended in Benzol with Phenylhydrazine a good yield of P-Amidophenol is obtained - a Resin is formed

Chlorine at ordinary temp gives Hypochlorite Soda, at higher temp gives Chlorates — by Electrolysis
Possibly Chlorides in oil even a trace act Catalytic & oxidation of Nitroll is really brought about by hypochlorite but if heat too great Chlorate forms & we get poor charge
130° F also only 1/2 the Capacity

Phenol is formed when Cyanamide acts on Acetic Aldehyde. Makes a resin by Formaldehyde

Naphthol is a resin — made by action P2O5 Monoxide & Sulphuric acid on Benzol
Then showed Condensation with Formaldehyde

Bakeo

Bakelite

To obtain the Amido Cmpd
Lumiere Compt Rendu 116 1202–1205

Take P-Amidohydroxybenzene — in Conc Sol pour it into Conc Sol Sodium Sulfite — Wash Cryst with ~~Conc~~ Na Sulfite slightly charged to Phenothiazine, presume he means Sulphurous acid — Stays behind long time —

Nitrocompounds are reduced by Arsenite of Soda —
Use stirrer & suffocating tube & heat

Dip sheet iron shapes in Condensite Varnish & bake to harden

Nitroaniline & formaldehyde Make a Varnish

Bergen

Hydrogen can be absorbed in great
Quantities by [illegible]
[illegible] with [illegible]
a [illegible] from shark oil
3.31 grms dissolved in 30 cc of Ether
in a [illegible] flask ½ grms [illegible]
Platinum black added
Hydrogen passed, under mercury
absorbed in 2 hours & 40 min
[illegible] 1120 cc
See [illegible] Journal of Industrial &
Engineering Chemistry [illegible]

There [illegible] other [illegible]
absorbing [illegible] more
than this –

Eriogloucine made from
Benzaldehyde O-Sulphonic acid
Condensing Ethylbenzylaniline
Sulphonic acid — Eng Pat
Graham + ~~Detitle~~ + 25128 Pat et al.

One Chemist says cant make
Metal base by direct methylation
of p-amidophenol but has
obtained it by heating
p-hydroxyglycocine at about
220 Centg

See of our Mypbrane waste
acid with nitrate Cotton to
Collodion –

Make 50 lbs Resinate Magnesia
to try substitute for Shellac
in blankets –

Try $CoOH$. Entirely so could make a reversible battery

Pinacyanol Dye
+ Dicyanin –
Better sensitizer plate so its useful for photography in Infra red – goes up to goes up to 7800 here in infra red

Precip $Ni(OH)_2$ with just right $NaOH$. Take some make 2 test cells – Then some more boil with strong $NaOH$. make 2 test cells – Then boil more + make test cells + keep until $Ni(OH)_2$ is white –

Find the most rapid catalytic agent for decomposing H_2O_2 so can put in $Ni(OH)_2$ –

Dehydrate $Ni(OH)_2$ by strong $NaOH$ till its white + insoluble then find a solution or means of rehydrating it – if found it will improve the cells.

Experiment on $Co(OH)_2$ as a substitute for $Ni(OH)_2$ in battery – get it high capacity –

Find out what Bismuth really does in our cell.

Mr. Chem man work on

Powder for Desc Munjac
Resinate Magnesia
Manilla Copal

Rare Emf Lelando
feed a NaOH Combination that
will dissolve more Zinc
also an Electrolytic Dont dissolve
Zinc but the oxide of metal
with it + about of feed Copper
Build out on rectangular plate, + Return

Data on Bismuth cell

All Cobalt Providing Lines
20 Conductivity
for Submarine —
also Neg Co for Leclanche —

Make Cris

Bachman ~~Dry~~ is regeneration
Cell dept ~~get Tom~~ —

See Oct 15 — Metallurgical
Chem Eng — Electrolytic Zinc
dust from Zincite —
1 Lb 3 KWH. Prop fine, dries
to powder 300 amp sq ft
rotating drum Sample left
NaOH 25% to ~~[illegible]~~ Zn at start
1½% at end
Best is 30% NaOH saturated
with ZnO 3 Volts
All the above in Connection
with reducing organic
Chemicals in Acids.

Lokomann

German Chemicals Imports
1913–14 on increased prices

lbs	£	
11088	3414	Paraphenylenediamine
55245	16991	Benzidine
66596	25140	Hydroquinone
10631	1,684	P-Amidophenol base
1,444,772	116,628	Anthracene
1060	164	Acetanilid

This is for

Myrabane	5½ cents
Anthracene	8½ c
Acetanilid	15½ c
Polyphenylenediamine	31
Benzidine	29
P-Amidophenol base	29

~~2 weeks ago Hudson made a deposit on strong cell —~~

~~Best for Bi VNO4 ppt to precip Bi + Ni ed / separation then Bi to Chromate. The Bi + Chromate compound thus leaves remaining~~

Bi intimately commingled to each product of Ni — Can remove by Recovery of Crystals — perhaps other ways also formation of Crystals

Try Silicate of Potassium A 4 Cell

Try Bismuth with Cobalt Negative, KOH + also Nitrate + K Silicate

Try Sulphur & other organic Sulphides & Sulph. or Sulphating Solutions — Try Acetates Chloride & other Copper Salt. Electrolytic with Corresponding Organic Chloride etc

Try mixed in large proportions other mechanical wire Copper Nitrate, Alkaline, or Neutral

Try Ferrosulphate of Copper with Decreased of Sulphating & also other Sulphuric Copper acids

Lolantic — See of Fertile & Plumbate Cause not so Tunsolin Alkaline Manganic Mixed with Ferrous Copper Ferrous V Quinol hydrogen.

Bismuth precipitate with $Mn(OH)_2$ cold dried cold precipitated cold. Then hot dried wind up Complexing

The possible NaOH crystals could be prevented by precipitating with Sulphur salt & that Salts precipitate gradually second part then we would have the microscopic $Mn(OH)_2$ mixed with ferrous, thus may be prevention of Pb works and in small cell but not enough legend to do it on big scale.

Make small Bi Cells which have only some amount of Electrolyte as much like as in big cell —

Possibly Explanation only, Big Cell Bi yields no better than Reg cells, longer as Bi is working out of the Hydroxides $Na(OH)_2$ perhaps Cinchonin generally

Use Iron Zinc plates instead of a K Sheets Zinc —

Power NaOH —

Sulphate Magnesia &

Sulphate Zinc, & so on

Epsom Salts — Zinc

Sulphate Percolate &

Then Lead & Bismuth

Out Zinc — get porosity — use $Na(OH)_2$

Lelande Iron — Electrolyte large amount Oxygen

Another different Kinds to see if dont dissolve more Zinc Cl_2 —

Try a double sulphate of Iron and Zinc, then no at to see how reduce — then boil out Zinc by Hot NaOH. There will be some Zinc left but this well prevent iron going into solution — This will give great porosity although iron may be lumpy. Could try Antimony, & Lead, so dissolves out of solution for Oxidation

Tuesday — Myrtle Shell

Make a series of iron sulfates mixed with lime, Ba St Fe

Add a quite, Ba Fe Mn reduces

Then finally decide the Fe + the

Ca Ba or Sr will not decrease

[illegible] in solution as Hg

Cr [illegible] at dense, ~~[illegible]~~

~~[illegible]~~

Now add die — brass or clerk

[illegible] see how it

acts + note,

test for iron not at 212

for ½ hour —

Micro test for [illegible] color, both Mercury & [illegible]

sep —

test for [illegible]

Note Vac [illegible] on the

several Dis — several times

each —

Is the chlorine [illegible] water continuing

Why don't this accumulate +

what what becomes of it

Note — Humidity time daily +

Temp at [illegible]

Notice daily pressure on

black pressure. Main pipe

no critomen —

Notice quantity of Vanish

should have a fine grade

+ [illegible] test [illegible] powder

Vanish — it may vary

greatly in [illegible]

1

Hemlock — Wet powders for
sore throat — Fowler's Sol —
There is a big difference —

Tie Cord to Cylinder of
Disc — one ~~[illegible]~~
Tride or big round bit
thin metal —

Paint Violin strings with
Mercurochrome with Rosin in
also other high tones
Varnish also with Rosin
Silver etc for Volume
Put in out stand & paint the
Bow itself — soak in Conc Calc.
Then immerse in Carb Soda, precipitate
Chalk in pores also soak in sodium
soda, then add acid — then leave Resin
in pores — also Paint
Hanger & the
strings with
formaldehyde

Existing cotton
Braided from 6 or 8
finer ones —

Trench —
36 ft Tunnel below
water level filled
with water to hinder
in trench fighting
2 funnels to triangulate
position of a big gun
Several miles distant

Find position big Guns
note def velocity of
real sound & the
Extra speed of the
first waves or big heavy

Place gun 5 meters away
Triangulate on receiving
phone with Lehigh Galvanometer to
get position.

Weight to step short & contact
waves but let thru
longer wavelengths —

Benzene or any
Zinc Reduction temperature
must reach a point
where it dehydrates ZnO
is very attractive on
Tracks its hardly bad
on gold

Have Mitchell try a small
test cell thanks to gun
some time & has fixed Copper only
then charge — Immersion in
10th of bulk of H_2O_2 or
best it. electrol for 6
hours & discharge
test before charging then
make same test
without H_2O_2

Pack a lot of CuO telluride
plates in Bachman
Smallest amount to pass
pass Cold H then
bring up to red and
pass any little gas away
will get strength
water to reduce 2% of
the Copper.
Cool — H + test —
pack so H must pass thru all
plates —

John Constable to look over
Report of Cliffording &c
see what he knows about
Machinery for mfg

About get a space 40'/20
leg to give 2 or 3 men
job of working up a
Bonding Scheme for
Disc blocks in sections
men earning 75%
or more.

One of the new Chemicals
was found Copped
to get it hard with
Chlorine & in the
Batch —

Find the Engineers patent

Fredett - 1/2 dog Muggles,

Try printing cart Lime from
Lincoln,

Send Smith over to Mclg -
Heller & Merz & Co to all
dealers & get samples all
types wanted —
get best dogs we have

Dally try a bit more
add R Chlorate a little
to percent H reducing
[illegible] Bright

Dally get some Rammelsberg
some Bergmann & make Lime
Add 1 oz element of soda
& see get %

Try medicating from concentrate made by Slocum Opium McOA.
Also Morphine

Put 100 grams Morphine to 130 cent
add to it 100 grams CaCl
Set boiling at 1/3 cent
& Lime dust, MgCl, K_2CO_3
[illegible]
[illegible] at 98 [illegible]

[illegible]
by dissolving in [illegible]
[illegible]
Dry the [illegible] 212 before dissolving

Get Tim put away
Make Enough Vars for 15 Pressed
More or more 6 4 — + less +
less free phenol —
percent from same mould
The def lots to see if can
drop blessing + fibres spring
back & growing & deformed —
also try it on 3 fibres 4 —
Chalk 1 Lac to get less spring

Boil Wood fibre in a Kerosene
Mother Bpoint [illegible]
in this dissolve various
things and in paraffine
lessens [illegible] etc — Then
dry 4 Bron Frosch
pressure a balloon using
Naphtha 1 + 200 [illegible]
[illegible] on to [illegible] — [illegible]

C25

with 10 grms Hydrazine
25 " Zinc
6 " calcium
30 cc 30% NaOH
20 cc water, about put in after
got thick at 6 hours 45 min
got

1st 4.260, White Hydrazobenzene
2nd .430 " "
final .790 Azo red benzol.
Not figured on hand to be
much larger - approximately
Zinc in sample of two months

Yield should be theoretically
7.450 -
got including Azo
73.5% yield

H A Metz & Co Have 900 Dyes which to
2 much trouble get out samples of all
will have about 20 friday each separately
a group 122 Hudson St
See Mr Clarkson

Bayer & Co 117 Reed St N.Y.
will find out from Warehouse at
Albany if they have any samples -
let you know monday

Cassella Color & Chem Co
182 front St N.Y.
Dye depts run into Warehouse
cold & impossible to furnish
samples of all - what to
know which ones wanted for
Global Selection Board
Get what you want
See Mr Ludwig

Robinson Chem Co
213 Lake St
Short Cross to submit samples

[illegible]
107 Underhill Av Brooklyn

Might be able to use Xylenol
send samples quickly
Write Mr T Miller about what
sample & qty you want

Gessner Co
[illegible] Broadway

Mr Lichtenstein said some
thousands of lbs of Xylenol
indicate what class of lbs
You want he will try & help me
has some from Schieffelin
Write price & sample of
Xylenol

Heller & Merz
Hamburg Place Newark

Mail sample Xylenol & price
will see what can do with it
Very difficult to illustrate
He will collect some samples
& send them along in a few
days

Batesche Chem Co
128 Duane St
Mr W P Pickhard

Willing to recommend some
you but say so many def
that I would not know
what to send you — If
could give them an indication
will be glad to help you
out

Diamonds Sept =

1 Carat 32 possible splits

After Crushing	14.46
" Chipping	3.54
" Drill set	3.54
" Machine set	3.54
" Roughing	2.43
" Grinding - Turn off flutes }	1.82
" Reground reground }	
" Round & polish	1.59
" Turn & cut off	1.59
" Assembling	1.56
" Beefing	1.56
" Reassembling	1.55
" facets Pyge	1.54

Starting with 14.46 points

75.6 % lost in chipping

7.6 % lost in Roughing

4.3 lost in grinding, taking flutes off & reground

1.9 % in grinding & operations

Lu Benzidine Experiments
Redutfel Mysbance –

Rig up Dark room like X ray for photo Experiments –

Test Cracking of glass in Diamond
Cracks. Used quartz then
say Orthoclase having mica
Crystalizing & those sub-stances
Crystalizing like diamond
when let stay Diamond

Polished 3 Copper plates one
slightly oxidized in plumb
in Nitric sol – found it and
reground to right size plate –
(Rounded) Therefore – glass cannot
~~crack~~ crack right
(Grinding of stones work
are reground to right gradually

Iron red than purple & then opaque black, zinc colorless plates.
Coated with chloride paste, several cells zinc dipped. Ambient water. EMF 0.1 Volt & Current of 0.2 amp been obtained from cell containing 2 plates Copper 6" square the plate exposed to light was a dark purple color the other plate light.
N.Y. Electric June 14 1916
12 pages. T. W. Case

Work very satisfactory quite as lightning thus showed up at night with sensitive metal coloration –

Think we need of Camera observers, Thin pads like, the Cross & Cross made by Lewis

Length of Red waves of light $\frac{1}{33400}$ of inch – to $\frac{1}{65000}$ for extreme Violet,

Lighthouse lenses may be the right thing –

Diazo-Compounds are very sensitive to light, which induces phenolic decomposition, even when the action of heat is active or needs in sunlight, some diazo salts stable at 0° decompose at 10° C –
This would be good for plates by incident heat in presence of something that would give a color with the diazo decomposition possibles see Chem Soc Proceedings 1907 91-35 or Jnl Soc Chem Indust 1890 9 1001

also for other exceptional decomposition of diazo compounds —

Ber 1874-7-1061 — 1884-17 2704
1896-69-1327 — 1902 35 89

Chem Soc Trans 1896-69-1327
1902 81-77 1905 87-5
1906-89-19

Diazo salts are highly antiseptic & explosive

Manous formate good reducing agt.

Formic acid & its appropriate deriv.

Hypophosphorous acid

Hydroxyazobenzene —

10.5 parts soda in 30 parts water —
10 parts Hydrosulphite
5 " Alcohol
17 " Zinc dust added
small portions at a time
The solution boils & it should be kept at boiling point while or during period Zinc is added

Now cool dilute with water, temp should be kept below 15° Cent
Carefully acidified by HCl
Hydroxy separates & should be filtered off = the azo is turned to Benzidine by boiling with HCl

Benzidine MP 122 (127 to 128)
its a para compound
(then azo) gives Quinone
gives a number of Color
reactions, Cl, Br - Kperman
ferricy Cr and gives
dif shades

Benzidine azo group
depends on direct
Cotton not very stable
to light

See Dictionary of Applied
Chemistry Vol 3 p 220

Diazotype photography & no silver

Primuline - Diazo process
by Crane & Newan
can get any color by using
dif developers -
No silver used

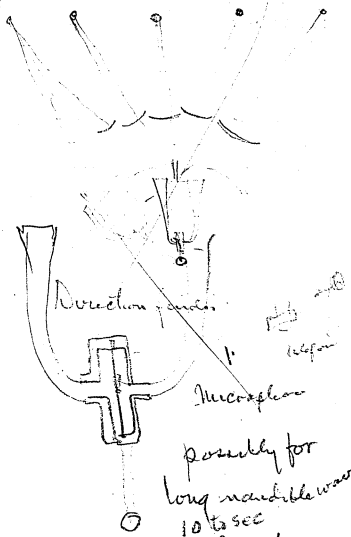
Paraphenylenediamine HCl
should get very sensitive
to platinum pen on paper
with Cuprous.

Wireless waves are
reflected by metal
& some use the modulator
should be able to get
reflected waves in a picture
Ross Trowbridge

~~Get most extensive work on Wireless — Want get waves lengths~~

~~Lt Pickhardt & other Chem Bldg the project does not increase detection like National debilation~~

Sounds



possibly for long inaudible waves

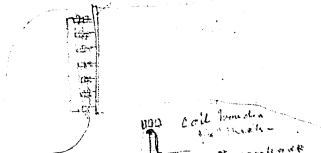
10 to sec

Given desc in front horn

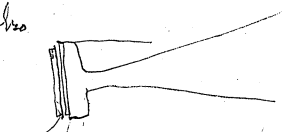
Account of Langley's Bolometer in Annals of the Astrophysical Observatory of Smithsonian Institution 1900 Vol 1

Can measure $\frac{1}{100000}$ deg Fahr

Face view



Also

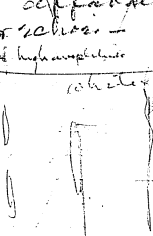


to send sound waves instead of Electric waves by wireless application

for which — 200000 sec of high amplitude

which electric arc

Rectifier of Fahrenheit in CO_2



use 100000 candle power of electric arc

Illuminate ship by invisible infra red photo by Very sensitive Infra red plate

Echo Sound waves in water with (tuned) Resonator for echo & microphone - this will also give distance accurately - for use of motion pictures -

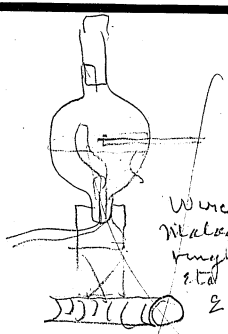
Should make the Dorette phone for Experts at Sandy Hook -

for triangulating & finding by gun a difference of from other guns or vessels Calliper - like the Earth waves, Plans Sounding board against tamped Earth inside a trench

Check Lab Mr

L Oth How about Resonator Mg - Make some powder & a blank & see will make the small discs - if too brittle or too high or low acid free Resorcin alcohol

Where is the Mungak try that as well -



Wireless
Telegraph bulb
ring & Rubber
etc made
2 Effect

Revolved, not
round but long
think of a sausage

Treat violin strings where
bowed on the body bacon
by formaldehyde, or dilute
or permanganate of K or
the alkali – also soaked vanum
water & of through angel & also
Colloid – to increase friction

Chrysanum Amonia HCl

100 grm cost bone
100 cc HCl 22
150 cc water
5 grm Bone black
1 to 2 grm Tin – Boil –

precipitate in 200 cc
22 HCl – filter in bag

Nov 15 1916

Photo by telegraph

~~What wax~~ Disc coated
gelatin photo raised a little
[illegible] Reduced with [illegible]
250 times to make the
sound made by expansion
following the photo
transmitted by telephone
& this work recorded
display & recorded in
white wax disc
If synchronism is perfect
the wax disc is grafted
Copper plated, mounted
& is ready to print —
[illegible]

Cobalt salt in photo plate
in press a salt which
changes [illegible] of Crystalizing
by light & water [illegible]
Color " [illegible] salt

~~Send to Bureau of Standards
for any publication of
Cobalty on Micro
radiometers —~~

Also US Hydrographic
office bulletin May
13 1914 Frequency
Oscillation —

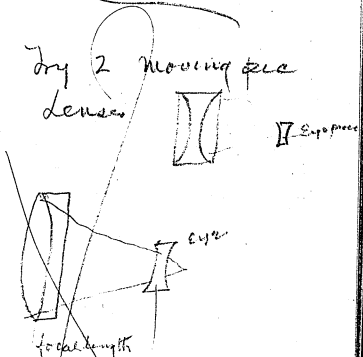
precipitate in pores of wood fibre a lime salt

Boil fibre in Chl Calcium for several hours, quick wash & then in $NaOH$ not long enough to precip chalk – 1 bottle Eng Carb Soda – that won't hurt fibre, wash & dry if good make Enough for 1/2 dog blanket

Try baking blanks before Varnish put on at 200° Fahr – 1 Hour –

Try – excess Sulfate Ni in Acid bath, little Tin –

Try 2 moving pieces Lenses

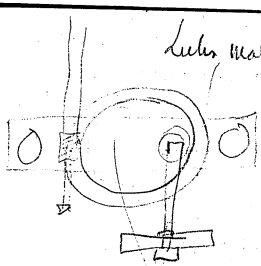


Short focal length, large object glass, low power eye lenses are conditions for bright image –

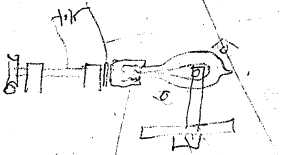
Put new wood fibers in the 2 blade shaver that with some Sulphite Soda & boiling water & see if can get it finer –

Try turning Amerlo Grass into Sulphate salt then add HCl – ~~Lot~~ & Tinture OK

Lulu make –



Melograph to use drums of them material etc.



Lamp

Prent 1 Round / Reg 6/4
1 " 8 1/4
" 8 1/2
Holes 9
Scratch 9 1/2
4 surfaces by 10
Wheatstone 12
4/0 OH

Gal Collodion Co Co
Load Collodion up
with fine clay
Silica Lowers or
something wet
Collodion by acid
Step collodion process

Neutralize Acids
legend to Amphotech
Covered over with
Kerosene 280° BP or higher
Syphon off — to stop
absorption O by from
air —

+ Crystaloids
Colloids = Prussian Blue ~~Turnsol~~
+ ~~Sulphuric Sulphuric~~
Indigo Sol. Ferric oxide

Crystaloids - Fuchsin, Chromic
Chl Ferric chloride Saccharose
Ruffinose

Rams suspension Clay Ultramarine
(Wheat starch,

Gum Mastic in alcohol
formed with Cu Sal
& also other things dissolved
in Alcohol

Manna acid non Res

Res Molybdic acid - Molybdic acid

Reversible Gelatine not
Coagulated by Bichrom salts

glycogen
Protein Some Dyes also Reversible
& Tungstic acid Reversible
Congo red Reversible

Arsenic sulphides

Silica from Silicate Soda
Fuchsin lost by Bichrom
Dyes not necessary
Azines do not Coagulate

Mercury K permanganate Collodium
Cu ferrocyn a Collodion

Tannic acid

Titanic acid

Tungstic acid Ammonium molybdate
Collodion not affected by
anything

Collodion Copper Sulphide
many Collodion Sulphides
Nickel,

Gamboge
Carmine (Dye)
Fluorescein, Uranine
Fluorescent Dyes stuffs generally

(35)

Indulin Violet black
Aniline Blue a definite sol
of Scarlet in alcohol
then poured in 6 pts water
in precipitant, which is not
~~pure~~ sol in water, the precip
gives Brownian movt &
shows Sep particles in colloid

Those dyes not sol in
$CuSO_4$ sol or water, dissolve
in alcohol & precipitate by
pouring into the $CuSO_4$ sol

Dyes the particles too small to be
seen in colloid regard
Thionsein Eosin Methylene Blue
Bavarian blue

Benzopurpurin Neutral Red
Capri blue - Picric acid
Sodium Thiosulfate Solution
get colloidal S

~~test Lampblack for grit~~

~~Test Lampblack Samples~~

~~Instead of finding Lamp black samples force it through a slit 30 of long brushes Condensing~~

Continue Experiments with high BP Hydrocarbons to dissolve off the stuff that stays particles together

Dissolve Bone black in HCl see if Carbon fine + ok

Cobalt + tannic acid

precipitated MnO_2

" Magnetic Oxide

" CuO black

Carbonate + Acetone

Nitric on Gypsum

Asphalt with a solvent

Solve Alcohol —

Dont melt +

precipitated Ni_2O_3 also from igniting Nitrate —

Try Experiment with Fe + Other Elements as Platin of Twist the drying (after one has accured) gas (air or ammonia) + then tighten + Turn —

[illegible]

To measure + decrease movement on long back surface

See if I have ~~[illegible]~~ Dioxiphenylamine

Patent sending photographs by telephone — photo process —

Melanic ~~or Melanin or Ulmic acid~~

Scratch = Causes

1 = Lampblack grit

2 " Cloth making dents possibly + unhomogeneity Condensate to fillers not penetrating cloth

3 Celluloid affected by acid Especially ZnO in it

4 Celluloid not cooled enough before removing from press pulls up by adhesion to matte surface —

5 fibres after pressing seq record gradually return to original shape after compression by aging Condensate coils it

6 Bad grafting Either spots must burn over no electrically + make spongy place also non conducting microscopic spots in graffito. + grease, dust etc.

7 = Loud cracking noise in Wax see book

8 Microscopic pull outs in records making moved duty

9 - Sand + dirt gets on moulds

10 Sand + dirt gets on Varnish

11 = Cooks up on initial heating (R) Varnish - bubbles which don't show but record (R) hollow

12 Dirt, grit, on wipe ring

13. Moving blank over moved with grit on Varnish

14 Copper Crystalline lumps spongy in spots thus forced into relief by the great pressure & heat many times applied

15 In initial heating of record blank before heat forced against record blank

16 Old tits on edge better, as blanks concave

17 Mould holders not perfectly cleaned

18 Grit in the Chalk hurts arch when deforming blank

19 Grit + the shellac

20 Grit in Condensite screw

21 = Hard microscopic particles of Condensite running from filter - over condensed in digester

22 = Grit gets in Varnish in making it,

23 grit in Sandarac

24 = Zinc metallic + also oxide in Paraphenylenediamine but seem well as none

25. blank material gets dry Varnish brush changed to Varnish + then back on next blank.

Test the Varnish lac + see grit.

Sub-marine coking mounts
Experts 11/26/16 –

1 = Varnish a celluloid with regular black Varnish – bake + print –

2 = Paint over a reg blank with boiled linseed oil ditto Chinese wood oil, dry to oxidize, graphite + then print

3 = Paint over a Celluloid blank with linseed + China wood oil dry to oxidize in oven, graphite + Print

4 = Get hard coal tar pitch paint over with linseed + China wood oil oxidize + graphite = also Pitch alone – graphite + print just at softening temp

5 = Use some reg varnish put in little pot with leather pads wheel till lampblack very fine - Paint reg blank bake reg & print. -

6 = Try quick drying japan also P+B powder over reg blank - Print.

7 Mix reg varnish with lampblack using China clay - Kieselguhr - Silica from clay, mix very in little mixer with leather pads or double paddles, make several trials more or less solids + alcohol - Paint blank - bake + print

8 = Dissolve some Victor blank - determine shellac + also separate fillers + note what fillers are

9 = Put 2 Vic 10" records together + print -

10 = Put more pressure on celluloid to fill + less heat to stop solvs also print at very low heat, a matter

11 = Wipe celluloid ~~[illegible]~~ blank off before pressing with moist rag to declectrify + remove fibres + dust then print. ~~[illegible]~~ that oil profile before print try Chamois damp

12 = For dipping celluloid use 10 & 25% Amyl acetate in the acetone to prevent water condensation.

13 = Make some Japanese without Lampblack put in Russelghum, Silica China clay & perhaps negrosin - mix in pond or double blade mixer, very thick & fellow till get general feeling & right viscosity to work with the brush

14 = If Reg Varn with clay etc works, paint the blank used for holding celluloid with it & bake & paint

15 = Find what become of the 100 lbs Mexican Jack

16 = Test bulk on Lac from Peabody

17 = Mix Russelghum, Silica China clay, fullers Earth well kneaded or well mixed dry to meal - then make a blank Test all small 2" second

18 = Do as 17 but use Condensite Test use 2" second

19 = See Illustration diagram 12" steam plate filler press - Chilling mixer big enough for Bengiamin

20 = Waste Cylinder
adhere a film & Cook
Calculate add filler
Knead hot & press to
blank for sub-machine

21 = get copy US Pat
1.197.316 TS Wennagel
Sept 5 -
flexible Condensite

22a Hoffman Make 3
submachine blanks of
req blank material

23 Make some Vac waste
fine graphite

good -
Wool Navy blue B Government
Patent blue
Bismarck Brown T.D.
Heller & Merz -
Fuchsin

Silicate Aluminum
Pears Soap
Starch boiled to jelly precip by alcohol
Aluminum with oxide
Carb Magnesia Magnesia Alba
" Strontia also manganese
Calcium Zinc Carb
Oxalate Ca
Mg
Zinc Ox
Phosphate Aluminum

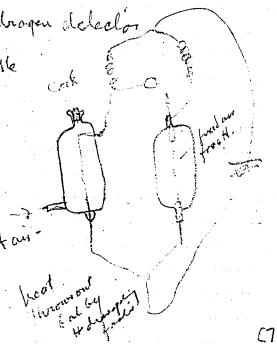
Baryte sulphate, not [illegible]
White Lead
Antimony Oxalate
Aluminum Metal bronzing powder
Ba Carb — Caution poison
Ba Phosphate
Ca Borate | very light powders
Milk lime,
Ca phosphate
Copper Carbonate
Aluminum Cl with H_2O precip by alc —
Chromate Copper
CuCy
Cu Oxalate
Cu Oxychloride
Cu Phosphate
Flour
Caramel with H_2O precip by alc
Gluten 7%
Resinate [illegible]
Oxalate Mg
Gluten Mg
Borate Mg
Mn Ferrocyanide
Cu "
Non Mettable Aniline dyes

graphite (fine)
Celluloid Dops with
China clay or Ivorite black
brushed on blank

Ground fine silk asbestos cryo
stone wont take to and to
get long fibres but very fine

Hydrogen detector

11/27/16



Dice Varnish fellow
Calcium Sulphate infusible
powders
Chromate of Barium.
" of Lead

Speak to Drummond about
preparing decks in Vari blank

Coloured with [illegible] of some
of over blank powder [illegible]
see how fine ground pulp is
then dissolve out [illegible]
see further, use dilute HCl

Diamond Cleavage 14 21
42 faces Cubic

Ferric hydroxide Colloid Carries a neg
Charge & attracted to deposits on
Anode [illegible] Chromium
Aluminum hydroxide Methylene Blue
Bismarck Brown Haemoglobin
goto Negatives – Tannin, Cornish starch
goto Positives where in acid sol

Second record book
Numbers on Experiments
with Rosin –

E 590 –	7-30-13
590 B	8-5-13
591	8 8-13
592	8 8-13
594 –	8 8-13
595	8 11-13
596 –	8-11-13

1½ Hour, 5% to 8.1 grams
Thus to 11% as the Rosin –

Thus –

65 to rosin	1	Sulphur	8.1 grams
	2		16.2 "
	3		24.3 "
	4		32.4 "
	5		40.5
	6		48.6
	7		56.7
	8		64.8 Equal

Numerolio –
Try sulphates of Chromium
Iron Tin Zinc Sb – Ur Mo
Co, Cd, Al Mg Ca &
in little cells as much as it
will stand

Write to the Commissioner of
Reprecation after getting name
of the Brilliantine Inventor &
Calling attention to Telegram
process

Hydrogen Indicator,
Closed chamber + porous
diaph. put the pulverine wet
in under 3" water pressure
+ note time + test of tubes for
pressure to equalize –
Use porcelain, bronze –
Compare, then differentiate it.

(77)

Also time of low pressure when air containing hydrogen passes out thru strong Capillary glass tube

Pure gas (thru a liquid from Capillary tube into gas at 16 bubbles of number per minute on constant pressure

pass air into flask with KOH pyrogallic acid — open air & absorb O2 — N & H left should show on index excess H.

Chamber, strip Palladium Electrically heated wires

Cleaning of H. let air & closed H should be absorbed in index water Column show —

Nitride forming substance capable of Electric heating in closable chamber pass in air heat & absorb N after air has passed and KOH, bal well be H.

Receptible with side arm containing chlorine & Ammonia close Receptible & HCl formed — ditto HCl acting on moist paper changes color

Closed Chamber pass in
air of boat or Extra H till
reaches Explosion point
Amount added is measure
of safety — or use, Current
& Zinc anode inside
Chamber & Spark plug
Chamber small —
Read by ammeter amount H,

Andrew Gallery why
Sp. 1. for 1 tube of 4 1/2 pkts

Paint 6 discs with
Linseed oil — dilute
Chinese wood oil
let Dx dry 24 hours
then put Reg Var
see how soluble

also Aluminum
See how sol oxalate Magnesium in
Reg Var + load it to amount or
Var 6 use reg thousand moulds
as usual may spoil Reg mould

Load Reg Var with Paraphenylenediamine
to limit Var 6 with + 6 without
Lampblack added,
dilute Para hydrochloride —

Reg Var loaded with as usual
highly heated & immersed in
oil lacquer or China wood
oil heated thick —
Var 6 —

See how fine Silver also
gold Cu &c get reproduction
with with pure Zinc dry +
Graphite or rub graphite
with it & test 6 by electroplating
An Chl precip to metal by Hydrogen sulphide
or oxalate &c

(81)

Naval - Mology sound
waves 250 feet or
more per second
phonograph very high speed
shutter breaking up
into dots dashes
reduce speed of
phono to bring it
down to 4000 sec
to read colors

Batch 12 lbs Resin
1/2 lb MgO & Cook till
thick -

Batch Resin peas
air & boil till
thick -

Naval
With prism sort out exact a beam
which is only photographic & only the most
intense point of this. The shutter gives
if powerful very low humming to
a distinct chip & yet reflect back
the most power ray for photographic
purposes perhaps with powerful
arc with this selected light of
very low humming the whole
~~light~~ hovering the humming
shadowing the day — as might come
on & thus generally diffused low
rumble humming, a general wind
scarcely to noticed by the roaring
exact photos cannot be taken of
this prism

Either prisms or absorbing
Bells can be used to cut off all
warm wet photography

Get some Reg Clay - f Coat & purify & Dry in Var
5°/₀ 3°/₀

Make Rosin records but shake screen of Shellac powder first then at formula before last on - general Shelling

Smooth down clots on one record & print it on test mould

Grind some reg Var on new dark medium wunde by Lutz

Grind shellac impalpable respecially if floating in water & drying

Mix with 4+3 dry & make a blank -

Also dissolve has in Carb soda also NaOH, dilute & precip by HCl in Cold Sol - filter & dry natural - Mix in hot mortar with Chalk & wood of pronunning make enough for a blank - also dis in EtOH precip with Cold water - mix much with fibre & chalk

Try Rosin dis in alcohol precip in water, cold - then use much of filtering to mix with dry powder & chalk & dry

All the above if get records test with Water

Have a reg Reg blank pressed on test mould see if OK

(15)

get a diamond point (req)
with a line ground across it
sharp

to run over records & scrape
off the points.

Suggestion - after grafting
Run a req reproducer over
grafted celluloid having
25% more weight on
at 1/5 the usual speed so
not to hurt side of groove -
then plate after shaving off -

Do we still use para in
shellac going into blank
if not why did we drop it.

Make single blank
~~Fill~~ fill blank with
gum shellac - Var & print
Smith 4% black ~~test~~
surface -

Paint a blank with palm
drops, dry thin Var

ditto with Rubber Cement
then dry & Var req

ditto linseed,

Varnish req Condensite Var
a celluloid & print it
see how smooth -

~~Dear Martha~~ Copal lacker
up Mg O -

Inquire of the Turpentine wood distillers make a Rosin of as yet some

Dimmedale ~~make a~~ break in the ring let one out –

Make Varnish with Azophenol instead phenol –
See if Azophenol soluble alcohol or water.

Paint reg blank with
50 phenol
8 16/14 –
½ Pana – Dry
Then Varnish Reg Var
print on test

Take reg blank soft Condensite powder 4 wood 3 Chalk over bottom long moned in –
Then soft Condensite powder over top – press –
& print cocktail Varnish

Also use Condensite Var & Chalk only ground fine – ditto ~~[illegible]~~
ditto, China Clay
~~not [illegible]~~
possibly may not need grinding

Try Resinate Lead blank varnish & try print one on glass disk – over glass used a blank
Try Tungstate of metals, Lead Lime etc

Double Var with Resinate Lead - ~~do~~ one coat right after the other -

Make Resinate Lead Var on the New stick print Mill -

Try Lead oxide only. Litharge in Method Resin also Lead hydroxide -

Grind Resinate Lead in alcohol - dry see if powdery

Try aluminum bronze fined out with Resinate Lead Var make blocks surface Var a piece of glass

Find out if Var has Negrosine in

Put some Res Lead Var on small 1¼" Transfer plates to already it, Condensed

Stick a Celluloid disc in a blank & print on that in mould - 2 of them

see the blank & varnished with Linseed oil on window sill -

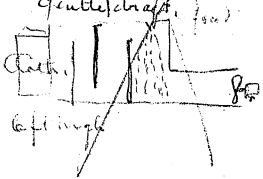
Take one of the best Mould records - Varnish the smooth side & print again use Resinate Lead Var

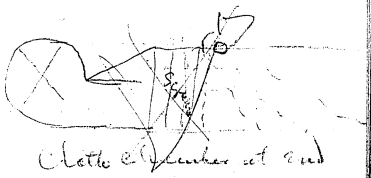
Old, distilled the Solution into the 3 Solutions

Find out % of the food made with fed Lac

Ask Hoffman of the saw ground flock 1 flock
6 chalk 1 hoe in small grinder

Mud Rig up a Chamber to blow Fulgurate
Wood fibre Smith attend
Ordinary table fan small
gentle draft.





Clothe chamber at end

Smith grind asbestos

Press a blank deep of China clay -

ditto damp -

ditto damp and by thin levels vapourish & dried & allowed but not enough to shrink & remain in diagram

Lith with hydrate Alum

Ask Dunwiddie if he did not once make a Copper that was brittle of glass

test & inspect the 3 sets Records with more & more 6/4

see if Rosendale Lead Sodium phenol ~~[illegible]~~ absorbing water or para m cresol

See about Stone Bur grinding Mills of Can get 2nd hand or if they are made —

Get some Menhaden fish oil

Revolving $\frac{1}{8}$" dia bullet to Squad a 3/8 m wounding

Make 1 or 2 blanks —

7 Kaolighur 1 face — also Fullers Earth

find out price Fullers Earth.

Get some of Creede short Arbester fiber with fine fibers & with grind —

Smith Grind Cotton flock

Maxwell Adolz - 102 guarantees that the New Edison reproduces Exactly the voice of the singer, with everything & Color, overtones so there is no difference

(94)

quickly from the original on the representation and the accepted the money if these statements are not found Correct This is not ~~[illegible]~~ done ~~[illegible]~~ by using talking Machine no sale

Send to Scheel & Co

10 lbs brown and Kilkenny
10 lbs Terra Alba
10 lbs French Yellow
10 lbs whiting
10 lbs Zinc oxide
one ~~[illegible]~~ gallon Menhaden Fish Oil

See Mr Hallowell getting on with phone sound range finder

See Hilton about going down to see the story about the Vale also if we can get put up temporary building until we make good if everything OK & no mistake has been made We can put up permanent buildings at leisure, We want it well, now.

The glass shaped Copper made by Dimmock in Philadelphia Hydrolic

10 mlg 50 mlg

100 & 1 gram — better hardest East Guilford

10 mlg good —

Belladonna makes Eye exceedingly sensitive to light, but no accommodation

Normal Eye would be O.K. in Binocular at distances

Can be used indefinitely where no tendency to Glaucoma, Third under 30 not affected even should it.

Should not be used in any Eye until tension used taken & fundus Continued use sometimes leads to inflammation of Conjunctiva

Instead Use of Homatropin Effects don't last as long Effects can be counteracted by 1/2% Eserine, then use

as a Myotic

Homatropin & cocaine drops 1/50 Each would be relief in Iriticlod,

Dilatation occurs 1 hour for maximum effect.

Accommodation can be secured in few hours by using Eserine

Robt G Reese MD
50 W 72nd St NY

Dry 2 5 R. Wet + mp in

little drops dinner pat see if it will have fever all appetite injured, take out muscle pills & dry

find solvent for Manjak
+ see what it is also if
fibre can be used also
Chalk — if the acid + Lime
be used also if Rosin +
Lac be mixed —

Take the good varnishes we
have + add little more
alcohol + filter in Vac
filter then 2 clothes no
paper + see how much if
any residue.

Make several hydroxides
Zinc Lead iron copper
Nickel Lime, filter + wash
on filter + then wash
out water with alcohol
+ mix wet with 175° Varn
+ test,

When Fred Ott gets the Varnishes
get several Carats of amounds a
Neat Diamond Engraving Machine —

Ask Dr Wardle why Phthalic
acid aint good, try Resorcin
pyrogallic another phenols.

For Varnishes try some of
the Dr Hanns Organics +
Chem recently obtained
high MP — + usual alcohol

Try — try of manjak sol — also
try asphalt, made very fine —

Listen to Mr Summers remarks
second,

Try Benzoate Salicylate Lead
Oxalate Lead, ~~Oxalate Lead~~
Citrate also Tartrate lead
Succinate, + other Lead organic
Salts for Varnishes

C14L]

absorption of arc light light in atmosphere is 10% per Kilometer —

aggregate generality of Blue & Ultra V in a Peck Incandescent light is 23%

Side light Vision — confused as to detail but far more sensitive —

Make pair spectacles & test

Manipulate Cellulose films & photography in Room saturated with monochrom light.

Any disturbance of the molecular vibration of a molecule cause waves to be sent out into space ~~by~~ on the Aether — Heating sends heat waves.
Should think an electric stress should send X waves to space. Magnetizing, other waves still — Chemical action still others,
What is wanted are instruments to detect such waves & bring them to the notice of our senses —

In addition to the Aether of space there may be a far more attenuated gas than in ~~any~~ any more atmosphere mixed with our gas. Extending millions of miles outward giving about 15 lbs to square inch

pressure but tons per square
but nothing to do with Aether
that while not taking any
part in the transmission of
disturbances in barometric
pressure of our gas to give
sound would if the waves
were sudden & frequent enough
travel on this gas pressure
& not on the general Aether
of space. The use of this
frequency waves of enormous
suddenness & frequency
such as would come from
internal molecular pressures

Perhaps the agitation of the
Inter Vibration not of Molecules
but between aggregates of
Molecules or distruction
of adhesion in metals —
like Magnetic stresses.

Think Vibration of
Hull of a big Dreadnought
sends enough sounds to
air Ultimately with the 28 ft
funnel & diaphragm as
sensitive as Werner
Siemens recorder with
Carbon ball cup in
Centre (a - balls of wooden)
or small seed Carbon
Could detect it 5 miles
away from a stopped
ship or a small
Torpedo or submarine
perfectly still

Kennedy to have a machine
here & bring over records
handier for me than
going over

Dissolve 3rd boil in HCl - use
Tin + get as light as can then
Neutralize close to Neutral
Constantly stirring but keep
slightly acid, Use NaOH.
also not contact with air
Also partly with lime +
finish with NaOH,
partly MgO + finish with
NaOH
Also try

Burn 1st + 2nd boil see Zinc

Try boiling Hydrochloride
in Every Solvent - also base
to get rid of Zinc - get all
Solvents together -

Hoffman
Get the Barrel of Rosin
+ Melt it all up into blanks
same as A 12. + Run them on
a special report for % OK -

Get 2 stones 1/2 Carat
+ 2 1/4 Carat
1 of 1 Carat To Crack -

Roller feed
over the pulp Cleaner find all one
in Cellar or other place.

Hoffman Make up 1 flock
to chalk 1:2 Blackline -

Also 1 flock to chalk +
More rosin than A 12 find
out what it was - + Sesame

Tell Chrudemann not to mix 3rd boil or even 2nd boil with 1st boil — tell and me up some of dried base right away

Boil the Alkaline Sol with Carbonate Soda this should precipitate the $ZnOH_2$ out of Alkaline Sol.

Pass Sulphydric acid into alkaline Sol this throws down Zinc

~~Try Experiment with 3 boil boil in water containing Chl Ammonium this should form double salt with the Zinc.~~

Mix Zinc Ox fumed with $ZnCl_2$ 3 pts to 50 parts of $ZnCl_2$ Spec g 1.5 @ 1.6 form Oxychl, can be poured direct quick hard working mould

~~Boil (3 boil basis) in Chloride Ammonium to form Double Salt of Zn and Alk. filter off — add of remove Zinc —~~

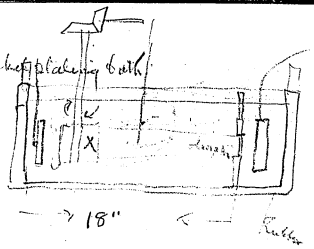
~~$ZnCl_2$ combines with ZnO to form Zn oxych mass hence if we neutralize Alkaline sol we should avoid any Excess of HCl otherwise Oxychl formed~~

~~Try dissolving original liquor in HCl if excess, discolor by Bin then Evap down & Chill out do it Cold & also Hot.~~

Sound attracts & repels light bodies, ~~can~~ are in a resonant's Fork at Mouth repels a light disc

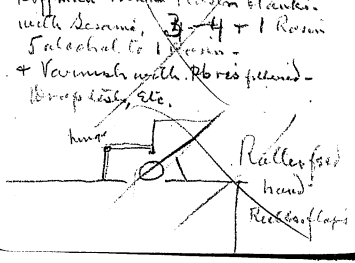
think 75 to 100 m sec gives by results

Nickel plating bath



X → take up and rotating

Hoffman Make Resin blanks with Sesami, 3 - 4 + 1 Resin
Salicylal to 1 Resin -
+ Varnish with Rb res filled -
Wrap lists, etc.



See if Smith can get Celluloid thick enough to Roll out in sheets.

China Clay next.

Send Maple Stained out over to Brown for grinding -

Mucilens

Fecundon

Bancroft.

T L D Wadsworth Pittsburgh glass, in big for himself -

If the internal vibration of a molecule is the source of the vibrations of heat and light then probably the lowest vibrations per second would be 250 million million a second being the vibration at ordinary temp.

Now if we want to get slower & consequently new lot of vibrations we must heat Double Salts or Complicated molecules This would give light & heat waves vibrations ~~and the~~ due to the molecules of the Salts forming the double Salt while superimposed on this would be very much lower frequencies (10) these due to the Double Salt aggregate

Finally we may use Liquid Crystals & Colloids and get waves slower yet & Solid Matter which might as allow give waves not more than 50 million a second, the break would be to discover an instrument responsive which would bring them to one of our 5 senses

If Cancer is due to a parasitic organism then it could be removed by pulling out the Cancer a poison or food more palatable to the organism that human flesh the organism would be likely to leave the host where it is constantly fought by the protective bodies & thus healing would take place

Brashear to make a lense for deflecting Spy glass.

Dissolve #3 base in Water + NHCl — when dissolved add Bone black boil & then filter, if better color redissolve & add it again —

Listen to Hays records —

Dissolve #3 boil in Alcohol then boil with ~~Lemon~~ bone black & filter then bone blackoxygen see if Cam get white,

After getting Zinc out of #3 boil base treat with some very weak acids —

also try ~~form~~ double salts to get rid of the azo acid —

try picric acid & other weak organic acids to combine without of HCl.

Boric, Phosphoric, Carbonic acids

~~Silicic~~,

Try after getting Zinc out, by pulling in Alkali with more Zinc then reduce — then add the NHCl acid then funnel to make Hydrochloride without Oxidation

If the red base is an Azo acid try Oxide Magnesia to decompose it, the Resin is an acid,

If Resin is acid & combined with amido base then if just heat to alkaline — the acid with combine with NaOH then boil bone black

this will take the Resinate out & leave pure base

100cc of alkaline batch should give 27 lbs base per gram get net of at of 10 grms yield would be 270 lbs per batch.

Running up the Lead Res plant,

If Rosin blanks work OK make 1 batch of 800 & Run them to get 1/2 of OK & perfect, 4-3-4 ?

See if pure Amedotell sol — alcohol & of of Colors - also Acetone
try wood al - & Pure alcohol

Crystalize some Para Ethylenediamine —

Try binal chloride to form double salts. Crystalize & then decompose by heat to form Hydrochloric acid vapor

Make up enough Pb Resinate to make 1000 blanks & use those blanks on new moulds to see if they are satisfactory —

Still distill Cresol & Hydroquinone in very high Vac — to some price of Zinc —

also try heat & CO_2 in partial Vac

See if Amedo HCl or Brom
Sol'n phenol —

Medicine Age in Borax
Carb Soda & other family
alk & lime Sol's —
So our dont affect them
precip in HCl —

Try Hour in Bengal Co
Inks grease out, Non dye —

Hoffman 1% of a mix of
1/2 Resorcin Mag & 1/2 Rodin
to get high Refract —

Test 1380 Rayon blank for
Cold & for Hot heat —

Ask Holland how ~~to prepare~~

" Warner " ~~on Photo~~

See if Age can be reduced in
Cold by a mix of graphite
& Zinc dust or Brom & Zinc
dust Local action
Metal flake & Zinc dust

Varnish Cellulosed with
Resine Lead Condensate
Var, Coulming action &
Amyl Acetate, 8% Resin —

Mumbert = what's being
done about Sept
Manager & Bookkeeping
for the Clerks in Worth

See about Mumbert about
Wilson Ring —

Amedo double salts Try Chloride
of K, Pb Sn Mg Mn Na Sr Ka'l Zn Cu
Al, NH Alum, Fe, Ni, Co, also some
Bromides & Try Cyanide acid & NO Mo
Ferrocyanide — Cyanides —

Hoffman Make blank
3 wood 4 chalk
·7 Resin 7/8 moulded

ditto ·8 - Resin -

test the 125° fabs
heated 1350 Recorded
also the one in the
Tool chest,
removed to
Office Room

Paint a blank with
Rubber dope but not
enough to close pores
then varnish

Make some of all ~~paper~~
wood fabs grounded
·47% Resin 180, 7 fabs 1.12 lac

Some all fabs with glue

Chromium 2000.
Bathy 1000.
Meadcroft 2500.

Werner - take ~~[illegible]~~ scratch second
on dark wax at 1/2 & 1/4 speed

Note length ~~[illegible]~~ grooves a number
per second in 9" Record - 1948 see

Find out Mount the 29
Diamonds & three Heads
put them Home & get repaired

~~Why~~ See if we have any
35 or 36 cut some more
get a 1081 4 Make some
dies - 4 - 3 + 1

Try Rosin & Castor oil
about consistency of fly
paper 4 - 3 + 1

Try ~~[illegible]~~ Reverse

Try flour paste. Try bac
& C baffles - [illegible]

Try my green cloth, blank
Celluloid with hard
Copper then put on Lion
cloth - see which -

Make wear test on Celluloid
Record - with Reg Speaker

Varnish Reg blank with
[illegible] shellac & put
on test mould -

Run a set of Pressures &
time Curves on test mould
to get best schedule for
scratch -

~~Make Muller Make 2~~ -
marked blanks.

Heller Melly – Make 2
Lamated blanks 1 to be
non form seq & turned down
the other to be plated with
Cryoppinous hard all way
thru to be non seq 17½
times if necessary to
compare –

Make Expert use seq present
schedule bring to final
pressure 20 seconds –
then release back to 150 lbs –
for 11 min 40 sec to cure
If this OK try at 100 lbs.
to cure. The fabric will
then be under very light
pressure when cured &
will not spring back

It may be veneer is too
thin & record is flexible at
the small area of Contact
of Diamond & it gives in
playing but springs back
& leaves no trace under
Micros –

Soak Varnish without
Lampblack into surface
as much as it will take
Dry – then Varnish with
Lampblack seq Var
This will make a stiff
Crust & prevent the
undulating –
Make one & try –

~~[illegible]~~

Here more make a seq
Stylus with 2 oz nickel and
3 see if less Scratch to
press above theory

[125]

Buy an atomizer, then put in an analine dye or some collodion spray — dry & then remove from the glass line

Try & make an all chalk blank of chalk to 1 Lac

Note if Rubber or film dope keeps Varnish Not from penetrating blank -

Try Pb resinate Var on top of Reg Var without Lampblack - the Varnish will go in deep & after dry but not bake the Pb resinate Var will stick & the 1st Var stiffen crust of blank

Make Reg blank, sifted over balloon & Lac, Chalk with shellac on it — see if stiff to mould -

No good

Make blanks with shellac containing different % of ~~[illegible]~~ & see surface blank will get to so hard. Try some shellac Carbon in cloth to get right consistent.

Also reg blank painted over or blown over with balloon & dope see if this hardens sensible

Get the formaldehyde silvering formula then Sublime some Naphthalene or skin this on the s of to silver cover — if then dont do by other chemist experts

Lo Schwert book a see if I made blanks with Kensington

Make some blanks with, 4 black 3 kamplback 1 [illegible]

ditto 3 fabra 2 black 2 kamplback —

Make up ~~[illegible]~~ 1/2 gallon Pb Res varnish. 10 to 175 & use this night alone also 15 to 175 second pound of last work —

Cant we use silk or other screen in back with no 1 black & made Mud gets on [illegible] possibly Engraphlos will [illegible] work OK

Why not varnish edge of brush —

Have 2 pots one reds —

New Pb Res does not settle out, no need stir just filter out fibre

Need [illegible] of filter out fibre device —

Weller Muller got one of three hull & flake 150 thread second He spoke about — use of its condensers

Make some blanks with 2 wood & 5. Kensington

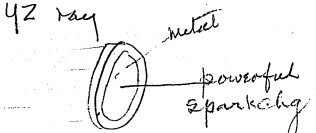
Chalk telephone point
Common Sponges to stop
wear delicate Carbon
Carborundum - Silicon
Tungsten

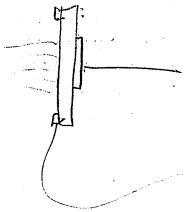
See if Hydrocyanic acid
Copper is decomposed
in over plating bath

Dr Muddie try some
square edged blanks
with the ring —

Show about the 40/000
bits & ring

X4Z ray





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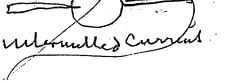


L X4Z

Get the Vegitable Dyes -
Especially Fustic for
plating boats

Experiment on Fish oil
with black dye, colloid,
for fouling Submarine
periscopes & Cables
Monat Try the Sulphur
Dyes from Buffalo
or H+Mez oil blacks
also black colloids -

Berlin blue -
Calcium phosphate
is galachonoin -

Get a new book

Have Warner try
the Mirror on a plate
of glass & also windows
at a distance, also
with an arc or Nitrogen
Lamps at dusk & daylight
see if our photographs
Cant be some Exploiting -

Hurry Drummond plant,

Hurry Resinite Lead
~~oil~~ plant,

Oiled roads
Try Crude petroleum =
fuel oil - Coal tar
thin - Unmanded down Resin
oil

Buy Medium white Thread
Aluminum fluorescent white
Buy Asphalts in
oils
Buy all oils as Cheap as
Mineral oil -
Buy Naphthalene in oil To
treat surface Tension -
buy pine needles oil
Beaumont Brown
Red Cedar -
Turkey red oil -

Dec 29/16

Finished points ammo 1692
" " defective 367 } Dec
Amberola ok ammi 3153

Finished Deeper decorations -
Amberolas - 9327
Finished Edisons Dec 8420

Stones crushed + ready for setting
30 000

Bort all kinds on hand
Sand "

There is in addition 1700
Wheels in our stock of
#200 Machine -
also 1200 in the #100

5370 Cards wanted in
1917 - good Sand Lapmate
points -

For 1917 150 000 Dec wanted
43670 in stock
106330 - points wanted

Amberolas 40 000 wanted
12480 on hand
27520 points wanted

Dissolve some hardest diluted nitric also some of the steel wire saw blanks to see if we dont get a Diamond polishing diamond Grit.

Maxwell estimates 100 100 000 carat in 1917

125000 Brazil
50000 Africa

175 000 points—

144 105 in sight from opp page on basis 6 points per Karat.

Fredett. averages 40 points to Karat

January 3 1917

Diamond situation

Disc

In machines at Chicago & Orange	2921
Finished reproducers in stock	8420
Finished points in arms	1692
" defective 367.	13033

Amberola.

Finished reproducers in stock	9327
" Arms with points	3153
	12480

Diamonds in holders—swedged	10 000
" " lapped for grinding	20 000
points ready for holders	30 000
" in holders ready for swedge	5 000
	65 000

Diamonds in Vault

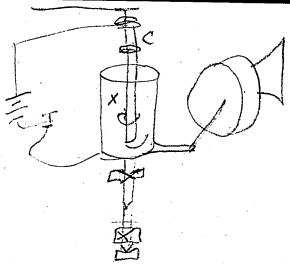
Consisting of bort, splints, + various diamonds not including sand, 15942 Karats

Sand 275 "

Ultra Violet light decomposes surfaces — say wax matter + pieces blown off.

Should try most sensitive Balmains paint on a glassy surface to a camera whose lenses are of proper material after exposure for a minute or so. This should be laid on top of a very sensitive dry plate rolled to repeat many hours to transfer all the light to the developed.

The malograph principle either with phosphor + revolving shutter, or without shutter + use of Mercury, + proper friction surface is going to lead to big results. All great energy changes + modifications of matter, by all kinds of wave motion take place at surfaces



Malograph — C metal
Pot M rotates — Cup
provided Connected to
Diaphram —

Liquid in Cup

Why not make a dry plate consisting of a mix of powdered reducing agt like Paramidophenol base or Hydrochloride a Bromide of silver —

Boronds of Carbon, Moissan —
Are with Copper Matrix, Cuts fresh
on diamond —

Titanium Carbonds also cuts
fractits — These 2 are the
only ones that cuts diamond

See if Can get Bonde Carbon
Mondé, tight does not work

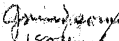
Diamond Lap Cylinder 1 inch long
dose of Iron pocket bellery steel
0035 3" dia —
Requires 12 Karats of Sides of
Inch disc Edge as mounted - 1/16
with 1/8 of a Tiron diamond. Cost.

Ask Brown of Condensite Co
if he can give me a Varnish
that will Condense hard + not soften
afterwards by heat.

Varnish Couple Blanks
with Phenomith Very bake
slowly & then bring up to
220 Fahr in 4 or 5 hours
& Off oven — then present.

Grind some Charcoal 97 thin
180 mesh mix 4 chan 3 chalk
1 Lead mounted it —
Look up old book see how it
cooled before closing them

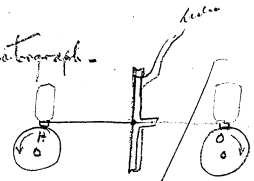
For Lapo Perrin Mailleville iron



Varnish over shellac with
Diamond dust on it 1/4 inch

+ Roll in by heavy pressure on wheel fed
along by a screw - face of wheel say 1/16 @ 1/32
do it 2 or 3 times then dissolve off shellac
+ save 4 Karats

Motorgraph -



Straight Commutator or alternating

Mr Bullock
London Times
Northcliffe sept
30 Church st.
7250 Cort -

Take the Melted Resinate Lucade by
Mlgd melted in Rosin or mix
with def proofline resin to get
Melting point -

50 Lbs Batch (Experital)

Wood 28 ½ lbs
Chalk 21 ½ lbs

Varnish

10 lbs Resin
35 lbs Alcohol

allowance to be made for metallic compounds
Theory needed —

Theory 10 Rosemarie Mg
to overcome as some Value
as ½ lbs Lac

Face of record Varn

100 grm Resin 160 16% from Ph
6 " phenol
1 para
1 Sandrac
7.8 6/4
156 to 200 Denat Alc to get right Viscosity
1½ mins Viscosity
5% Ground Lampblack

4 wood fibre 3 Chalk

100 lbs of the 4+3 mix
requires 14 lbs 5 oz Shellac
& 50 lbs Alcohol

3½ alcohol to 1 Lac
Resin best 5 alcohol to 1 Resin
probably also better with Lac

C1543

Kuzumoto tiff agreement.
July 22 1915 –

4000 lbs day production
Cost 27c (40c Bengal) for all
beyond 1000 lbs for increased
production above 4000 lbs
– 1/4 of reduction below
27 cents.

2.25.

100	2.25
18 –	.40
	2.65.

Eberle

24 | 27500 000 (1140

24000

3500

2400

1000

960

40

5240

5240

20960

10480

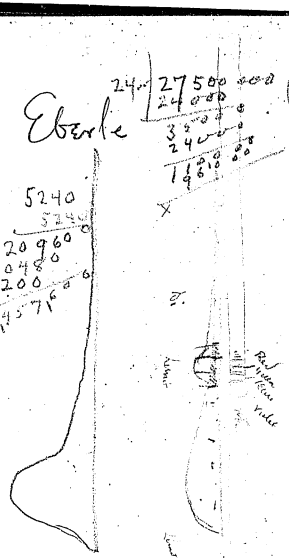
26200

27571

1140

912 gals per Mile

5000

9000

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